they appear to have been so little observed. While this is their probable mode of origin, the subject should by no means be allowed to rest with conjecture, but the genesis and growth of the balls should receive precise scientific study and adequate description.

SMITH COLLEGE, Northampton, Massachusetts.

AN UNDESCRIBED NORTHERN COMANDRA.

M. L. FERNALD.

IN July, 1903, Mr. George H. Richards collected in the sandy alluvium of the Grand River, Gaspé County, Quebec, a white-flowered *Comandra*, which in habit suggested both *C. umbellata*, Nutt., of the Atlantic States and *C. pallida*, A. DC., of the extreme West. The specimens were not, however, satisfactorily referable to either of those species; so in late June and early July when, with Mr. Richards, I visited the salmon-camp of Mr. Louis Cabot, the present owner of the Seigniory of Grand River, we made it a special point to search for the strange *Comandra*. The plant was found at several stations, but only occasionally in flower. Later in July, it was found in dry sandy woods at Tadousac, at the mouth of the Saguenay, and in September was collected in ripe fruit at the same station.

Study of this *Comandra* of eastern Quebec shows that it is a plant of broad northern range, extending across Canada to Saskatchewan and Assiniboia, south to the Great Lakes, Missouri, and Kansas. Throughout this extensive range the plant holds the characteristics noted on the Grand River and at Tadousac. Compared with *C. umbellata* of the Eastern States,—from central Maine to Wisconsin and Georgia—the more northern species is low, the fertile branches 0.5–2.5 dm. high, those of *C. umbellata* ranging from 1.5–4 dm.; the more crowded leaves are thicker, scarcely paler beneath, and when dry with green inconspicuous reticulate veins, the fewer thinner leaves of *C. umbellata* being somewhat whitened beneath and with the pale midrib prominent beneath. The inflorescence of the northern plant is a rather dense corymb, made up of 2–6-flowered cymules on strongly ascending rays; that of *C. umbellata* is an ellipsoid-oblong panicle with the cymules of smaller more numerous flowers on divergent rays.

This northern plant has only a superficial resemblance to the western whitish-green much firmer-leaved *Comandra pallida*; but it is the plant which has been generally taken by botanists of eastern and central Canada for *C. umbellata*, and under that name it was beautifully illustrated by Hooker in his Flora Boreali-Americana. There is a bare possibility that Michaux also may have had before him specimens of this northern plant when he named his *Thesium corymbulosum*, with "fasciculis florum corymbuloso-terminalibus,"[1] but he cited *T. umbellatum*, L. (*Comandra umbellata*, Nutt.) as a pure synonym and made no other provision for the common Alleghanian plant. Furthermore, there is apparently nothing to show for Michaux's species in his very complete herbarium at the Jardin des Plantes in Paris; and it is probable that, as in case of his *Anychia dichotoma* (*Queria canadensis*, L.), *Monarda coccinea* (*M. didyma*, L.), *Campanula amplexicaulis* (*C. perfoliata*, L.) etc., Michaux's name, *Thesium corymbulosum*, was intended merely as a substitute for the obviously inappropriate Linnean name, *T. umbellatum*.

Rafinesque, in characteristic language, announced in 1836 that "the *Thesium umbellatum* of L. has been well described as a N. G. *Comandra* by Nuttal, but he neglected the species thereof, and so have done all our botanists, there are now 7 or 8 sp. of this G. and I will distinguish 5 sp. of it, all blended by our careless Authors."[2] So far as it is possible to interpret Rafinesque's descriptions, his 5 species seem to be phases of the Alleghanian *Comandra umbellata* and not at all referable to the more northern representative of that plant. This northern species, apparently, has never received the distinctive name it deserves, and I now take pleasure in associating with it the name of is discoverer in eastern Quebec, through whose interest it was possible for me to study the plant in the field.

COMANDRA **Richardsiana**. Rootstocks elongate, freely branching, superficial or very slightly covered by the loose soil: flowering branches slender, 0.5–2.5 dm. high, very leafy: the strongly ascending green leaves from lanceolate to ovate, obtuse or acute, firm, with obscurely reticulate green veins: inflorescence corymbose, 1–3 cm. broad, of 1 to 6 2–6-flowered cymules on strongly ascending rays: bracts lance-subulate to ovate, mostly exceeding the short pedicels: calyx 3–5 mm. long, cleft to the middle into 5 oblong white (or finally

[1] Michx., Fl. Bor.-Am. i, 112.

[2] Raf., New Fl. ii, 33.

roseate) erect lobes: disc shallowly lobed: drupe dry, greenish-drab as in *C. umbellata*.— *C. umbellata*, Hook. Fl. Bor.-Am. ii, 139, in part, and t. 179 A, not Nutt.— QUEBEC, sandy alluvium of the Grand River, Gaspé County, July, 1903 (*G. H. Richards*), July 1, 1904 (*M. L. Fernald*); dry sandy woods, Tadousac, July 14, 1904 (*M. L. Fernald*), September 1, 1904 (*J. I. Collins & M. L. Fernald*): ONTARIO, woods near Belleville, May 22, 1878 (*J. Macoun*): MANITOBA, Lake Winnipeg Valley, 1857–1859 (*E. Bourgeau*): SASKATCHEWAN, Cumberland House (*Drummond*): ASSINIBOIA, Sand Hills, Moose Mountain Creek, June 6, 1883 (*J. M. Macoun*): WISCONSIN, St. Croix Falls, May, 1899 (*C. F. Baker*): NEBRASKA, Ponco, June 13, 1893 (*F. Clements*, no. 2519): MISSOURI, dry woods, St. Louis County, May 27, 1877, April 23, 1878 (*H. Eggert*): KANSAS, Independence, 1882 (*E. N. Plank*).

GRAY HERBARIUM.

VEGETATIVE REPRODUCTION OF SPIRANTHES CERNUA.

JOHN GALENTINE HALL.

AMONG the orchids, in spite of the great amount of seed produced, we all know how difficult it is to find seedlings of our native species in their haunts. With this knowledge comes the question, how do they perpetuate themselves? In most cases the answer is quite plain. In Arethusa a new bulb is formed each year. This is also true of Calopogon and Microstylis. In Habenaria a specialized root is formed each year and gives rise to a new plant in the following spring. Pogonia has an extensive system of branching roots, which give off stems at various intervals. In *P. ophioglossoides* I have found roots six to eight feet long bearing ten to twenty stems upon them, and in *P. verticillata*